MMX AV Series

Composite Video and Stereo Audio Matrix Switchers

COMMON FEATURES

- **Inputs: Video on female BNC connectors; audio on captive screw connectors or RCA jacks**
- **Outputs: Video on female BNC connectors; audio on captive screw connectors or RCA jacks**
- **150 MHz (-3 dB) video bandwidth, fully loaded** — Ensures switching and distribution of video signals without degradation. The ratings are worst case specifications, i.e., the MMX AV matrix switchers provide 150 MHz (-3dB) at full performance capacity when one input signal drives all outputs.
- **Buffered I/O** — Each input and output is individually buffered to provide maximum performance and virtually no crosstalk.
- **Vertical interval switching** — Provides smooth, seamless transitions when switching between synchronous video sources. The video signal applied to input one is used as a genlock reference.
- **Audio input gain and attenuation** — Allows users to set the level of audio gain or attenuation, -18dB to +24dB. Individual input audio levels may be adjusted so there are no noticeable volume differences when switching between sources.
- **Audio breakaway** — MMX AV Series matrix switchers provide the capability to break away an audio signal from its corresponding video signal. Switching can be done via front panel control or RS-232 control.
- **View I/O mode** — Allows users to easily see which individual inputs and outputs are actively connected. Available from the front panel or RS-232 control.
- **RS-232 serial control port** — Using serial commands, the MMX AV Series can be controlled and configured via the included Windows-based control software, or integrated into third-party control systems. Extron products use the SIS™ - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming. The RS-232 port also makes it easy to install firmware updates.
- **1U, half rack width metal enclosure** — Can be rack-mounted using an optional rack shelf.
- **External universal power supply included**, part # 70-055-01 — Provides worldwide power compatibility.

DESCRIPTION

The Extron **MMX AV Series** consists of economical, compact composite video and stereo audio matrix switchers that are effective in small installations, such as boardrooms, classrooms, and home theatres. They're also ideal for use as sub-switchers in more complex matrix switching system designs. The MMX AV Series is available in four models with 4x2 and 6x2 I/O sizes.

Video Features

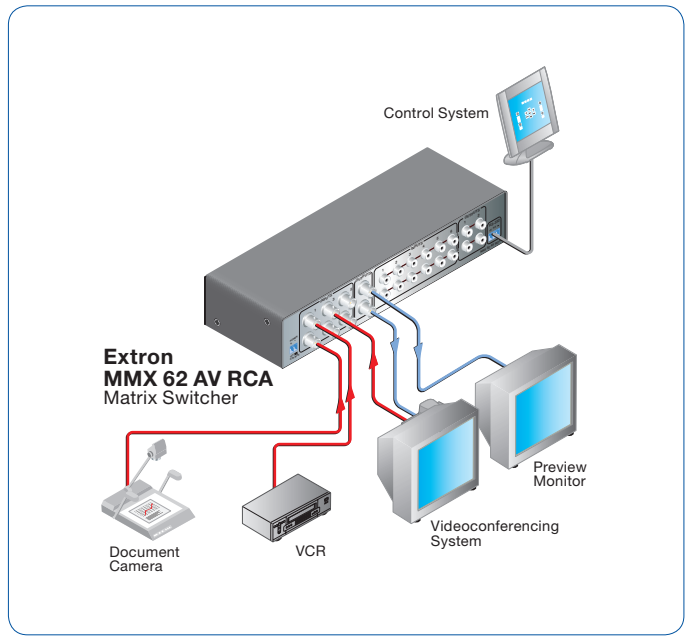
MMX AV Series composite video models feature 150 MHz (-3 dB) video bandwidth, fully loaded, ensuring signal quality in virtually all small system and sub-system matrix switching designs. In addition, all models are capable of switching NTSC 3.58, NTSC 4.43, PAL, and SECAM video sources for worldwide compatibility. MMX AV Series models feature video genlock to input one, which allows switching at the same vertical interval timing for smooth, seamless transitions between synchronous signal sources.

Audio Features

MMX AV Series matrix switchers are designed to switch stereo audio signals, and are available in two versions: AV models feature captive screw input and output connectors for balanced or unbalanced stereo audio signals; AV RCA models feature RCA input and output jacks for compatibility with unbalanced audio signals only. All models also include high-end features such as audio input gain and attenuation control, which eliminates noticeable differences when switching between sources, and audio breakaway, which allows the audio channels to be operated as a separate matrix switcher.

Control Features

MMX AV Series matrix switchers come standard with intuitive front panel controls for easy control of input and output selection even by non-technical users. All models feature an RS-232 serial control port for use with a third-party control system.



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Extron®

MMX AV Series

MMX 42 AV

4x2 Composite Video and Stereo Audio Matrix Switcher with Captive Screw Connectors

UNIQUE FEATURES

- Inputs: Video on female BNC connectors; audio on captive screw connectors
- Outputs: Video on female BNC connectors; audio on captive screw connectors

MODEL	VERSION DESCRIPTION	PART #
MMX 42 AV	4x2 Composite Video & Stereo Audio	60-556-21

MMX 42 AV RCA

4x2 Composite Video and Stereo Audio Matrix Switcher with RCA Connectors

UNIQUE FEATURES

- Inputs: Video on female BNC connectors; audio on RCA jacks
- Outputs: Video on female BNC connectors; audio on RCA jacks

MODEL	VERSION DESCRIPTION	PART #
MMX 42 AV RCA	4x2 Composite Video & Stereo Audio - RCA	60-556-31

MMX 62 AV

6x2 Composite Video and Stereo Audio Matrix Switcher with Captive Screw Connectors

UNIQUE FEATURES

- Inputs: Video on female BNC connectors; audio on captive screw connectors
- Outputs: Video on female BNC connectors; audio on captive screw connectors

MODEL	VERSION DESCRIPTION	PART #
MMX 62 AV	6x2 Composite Video & Stereo Audio	60-557-21

MMX 62 AV RCA

6x2 Composite Video and Stereo Audio Matrix Switcher with RCA Connectors

UNIQUE FEATURES

- Inputs: Video on female BNC connectors; audio on RCA jacks
- Outputs: Video on female BNC connectors; audio on RCA jacks

MODEL	VERSION DESCRIPTION	PART #
MMX 62 AV RCA	6x2 Composite Video & Stereo Audio - RCA	60-557-31

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MMX AV Series

MMX AV Series Accessories

OPTIONAL ACCESSORIES	MODEL DESCRIPTION	PAGE	PART #
IPL T S2	Two Serial Port IP Link® Ethernet Control Interface	page 474	60-544-81

SPECIFICATIONS

VIDEO

Routing
MMX 42 Series: 4 x 2 matrix
MMX 62 Series: 6 x 2 matrix
Gain: Unity
Bandwidth: 150 MHz (-3 dB), fully loaded
0 - 10 MHz: no more than 0.1 dB to -0.1 dB
0 - 30 MHz: no more than 0.5 dB to -0.5 dB
Phase between I/Os: <1.28° at 3.58 MHz
Differential phase error: 0.1° at 3.58 MHz and 4.43 MHz
Differential gain error: 0.1% at 3.58 MHz and 4.43 MHz
Max. propagation of delay: 5 ns typical (±1 ns)
Crosstalk: -50 dB @ 5 MHz
Switching speed: 200 ns (max.)

VIDEO INPUT

Number / Signal type: 4 or 6 composite video
Connectors: 4 or 6 female BNC
Nominal level: 1 Vp-p
Minimum / Maximum levels: Analog: 0.5 V to 2.0 Vp-p with no offset
Impedance: 75 ohms
Return loss: <-30 dB @ 5 MHz
DC offset (max. allowable): 1.5 V

VIDEO OUTPUT

Number / Signal type: 2 composite video
Connectors: 2 female BNC
Nominal level: 1 Vp-p
Minimum / Maximum levels: 0 V to 2.0 Vp-p
Impedance: 75 ohms
Return loss: -30 dB @ 5 MHz
DC offset: ±5 mV maximum with input at 0 offset
Switching type: Vertical interval

SYNC

Standards: NTSC 3.58, NTSC 4.43, PAL, SECAM

AUDIO

Routing
MMX 42 Series: 4 x 2 stereo matrix
MMX 62 Series: 6 x 2 stereo matrix
Gain
Captive screw models: Unbalanced output: -6 dB; balanced output: 0 dB
RCA connector models: Unbalanced output: 0 dB
Frequency response: 20 Hz to 20 kHz, ±0.05 dB
THD + Noise: 0.03% @ 1 kHz at rated nominal level
S/N: >90 dB, output 21 dBu, balanced, at maximum output (unweighted)
Crosstalk: <-80 dB @ 1 kHz, fully loaded
Stereo channel separation: >90 dB @ 1 kHz
CMRR: >75 dB @ 20 Hz to 20 kHz

AUDIO INPUT

Number / Signal type
Captive screw models: 4 or 6 stereo, balanced/unbalanced
RCA connector models: 4 or 6 stereo, unbalanced
Connectors
Captive screw models: (4 or 6) 3.5 mm captive screw connectors, 5 pole
RCA connector models: 4 or 6 pairs of female RCA connectors
Impedance: >10k ohms unbalanced/balanced, DC coupled
Nominal level: -10 dBV (316 mV)
Maximum level: +19.5 dBu, (balanced or unbalanced) at 1%THD+N
Input gain adjustment: –18 dB to +24 dB, adjustable per input via RS-232 only

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

AUDIO OUTPUT

Number / Signal type
Captive screw models: 2 stereo, balanced/unbalanced
RCA connector models: 2 stereo, unbalanced
Connectors
Captive screw models: (2) 3.5 mm captive screw connectors, 5 pole
RCA connector models: 2 pairs of female RCA connectors
Impedance: 50 ohms unbalanced, 100 ohms balanced
Gain error: ±0.1 dB channel to channel
Maximum level (Hi-Z): >+21 dBu, balanced or unbalanced at 1%THD+N
Maximum level (600 ohm): >+15 dBm, balanced or unbalanced at 1%THD+N

CONTROL / REMOTE – SWITCHER

Serial control port: RS-232, female 3.5 mm captive screw connector, 3 pole
Baud rate and protocol: 9600 baud, 8 data bits, 1 stop bit, no parity
Serial control pin configurations: 1 = TX, 2 = RX, 3 = GND
Program control: Extron's control/configuration program for Windows®
Extron's Simple Instruction Set (SIS™)

GENERAL

External power supply: 100 VAC to 240 VAC, 50/60 Hz, external, universal; to 12 VDC, 1 A, regulated
Power input requirements: 12 VDC, 0.5 A
Temperature / Humidity: Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing
Operating: +32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Rack mount: Yes, with optional 1U rack shelf, part #60-190-01 or 60-604-01; or VersaTools® rack shelf, part #60-190-20 or 60-604-20
Enclosure type: Metal
Enclosure dimensions: 1.75" H x 8.75" W x 3.0" D (1U high, half rack wide)
4.4 cm H x 22.2 cm W x 7.6 cm D (Depth excludes connectors.)
Product weight: 4.0 lbs (1.8 kg)
Shipping weight: 5 lbs (3 kg)
Vibration: ISTA 1A in carton (International Safe Transit Association)
Listings: UL, CUL
Compliances: CE, FCC Class A , VCCI, AS/NZS, ICES
MTBF: 30,000 hours
Warranty: 3 years parts and labor

NOTE: All nominal levels are at ±10%. Specifications are subject to change without notice.

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